

Form PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 327823-1052	SERIAL NO. 10/810, 333			
INFORMATION DISCLOSURE CITATION <small>(Use several sheets if necessary)</small>		APPLICANT Alan J. HEEGER et al.						
		FILING DATE 3/25/2004	GROUP ART UNIT 1634					
U.S. PATENT DOCUMENTS								
EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE	
		5,130,812	8/8/1992	Lobaeq, Philippe	437	7		
FOREIGN PATENT DOCUMENTS								
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION	
							YES	NO
/RTC/	B1	CN1422960	6/11/03	China [English Abstract]	Abstract	only		X
/RTC/	B2	CN1422961	6/11/2003	China [English Abstract]	Abstract	only		X
	B3	WO/04/005020	4/29/2004	Japan				X
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
C1	Kuhn, et al. "Electrochemical DNA analysis comes of age" <i>Nature Biotech</i> 18:1042-1043 (2000)							
C2	Willner, Itamar "Biomaterials for Sensors, Fuel Cells, and Circuitry" <i>Science</i> 296:2407-2408 (2002)							
C3	Fritz, et al. "Electronic detection of DNA by its intrinsic molecular charge" <i>Proc. Natl. Acad. Sci., USA</i> 90(22):4142-4146 (2003).							
C4	Brazil, et al. "Capillary Gel Electrophoresis with Sinusoidal Voltammetric Detection: A Strategy To Allow Four-Color" DNA Sequencing" <i>Anal Chem.</i> 73:4882-4890 (2001)							
C5	Palcek, et al. "Electrochemistry of Nucleic Acids and Development of DNA Sensors" <i>Crit. Rev. Anal. Chem.</i> 32(3):261-270 (2002)							
C6	Millan, et al. "Sequence Selective Biosensor for DNA Based on Electroactive Hybridization Indicators" <i>Anal. Chem.</i> 65:2317-2320 (1993)							
C7	Kelley, et al. "Single-base mismatch detection based on charge transduction through DNA" <i>Nucleic Acids Res.</i> 27(24):4890-4897 (1999)							
EXAMINER	/Robert Crow/			DATE CONSIDERED 03/22/2007				
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Substitute for form 1449/PTO				Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/810,333
Date Submitted: 25 January 2007 <i>(use as many sheets as necessary)</i>				Filing Date	3/25/2004
				First Named Inventor	Alan J. HEEGER
				Art Unit	1634
				Examiner Name	Robert Thomas Crow
Sheet	1	of	3	Attorney Docket Number	327823-1052

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (<i>if known</i>)			
/RTC/	A1	6,221,586 B1	04-24-2001	Barton et al.	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Application Document	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS					
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/RTC/	C24	Bock et al. "Selection of single-stranded DNA molecules that bind and inhibit human thrombin" <i>Nature</i> 355:564-566 (1992)			
	C25	Bowtell, D.D.L. "Options available-from start to finish-for obtaining expression data by microarray" <i>Nat. Genet.</i> 21:25-32 (1999)			
	C26	Brazill et al. "Sinusoidal voltammetry: a frequency based electrochemical detection technique" <i>J. Electroanal Chem.</i> 531:119-132 (2002)			
	C27	Buijsman et al. "Design and Synthesis of a Possible Mimic of a Thrombin-Binding DNA Aptamer" <i>Bioorg. & Med. Chem. Lett.</i> 7(15):2027-2032 (1997)			
↓	C28	Cheng et al. "Chip PCR. II. Investigation of different PCR amplification systems in microfabricated silicon-glass chips" <i>Nuc. Acid. Res.</i> 24(2):380-385 (1996)			
/RTC/	C29	Cheng et al. "Preparation and hybridization analysis of DNA/RNA from <i>E. coli</i> on microfabricated bioelectronic chips" <i>Nat. Biotech.</i> 16:541-546 (1998)			

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				Art Unit	1634
				Examiner Name	Robert Thomas Crow
Sheet	2	of	3	Attorney Docket Number	327823-1052

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/RTC/	C30	Cox et al. "Automated Acquisition of Aptamer Sequences" <i>Comb. Chem. & High Throughput Screening</i> 5:289-299 (2002)	
	C31	Dittmer et al. "A DNA-Based Machine That Can Cyclically Bind and Release Thrombin" <i>Agnew. Chem. Int. Ed.</i> 43:3550-3553 (2004)	
	C32	Ellington et al. "In vitro selection of RNA molecules that bind specific ligands" <i>Nature</i> 346:818-822 (1990)	
	C33	Fan et al. "Electrochemical interrogation of conformational changes as a reagentless method for the sequence-specific detection of DNA" <i>Proc. Natl. Acad. Sci. USA</i> 100(16):9134-9137 (2003)	
	C34	Fang et al. "Molecular Beacons" <i>Cell. Biochem. Biophys.</i> 37:71-81 (2002)	
	C35	Fang et al. "Synthetic DNA Aptamers to Detect Protein Molecular Variants in a High-Throughput Fluorescence Quenching Assay" <i>Chem Bio Chem</i> 4:829-834 (2003)	
	C36	Fukusho et al. "In vitro selection and evaluation of rna aptamers that recognize arginine-rich-motif model peptide on a quartz-crystal microbalance" <i>Chem. Commun.</i> 1:88-89 (2002)	
	C37	Hamaguchi et al. "Aptamer Beacons for the Direct Detection of Proteins" <i>Anal. Biochem.</i> 294:126-131 (2001)	
	C38	Herne et al. "Characterization of DNA Probes Immobilized on Gold Surfaces" <i>J. Am. Chem. Soc.</i> 119:8916-8920 (1997)	
	C39	Hianik et al. "Detection of aptamer-protein interactions using QCM and electrochemical indicator methods" <i>Bioorg. & Med. Chem. Lett.</i> 15:291-295 (2005)	
	C40	Hianik et al. "The study of the binding of globular proteins to DNA using mass detection and electrochemical indicator methods" <i>J. Electroanal Chem</i> 564:19-24 (2004)	
	C41	Ho et al. "Optical Sensors Based on Hybrid Aptamer/Conjugated Polymer Complexes" <i>J. Am. Chem. Soc.</i> 126:1384-1387 (2004)	
	C42	Iqbal et al. "A review of molecular recognition technologies for detection of biological threat agents" <i>Biosens. & Bioelectron</i> 15:549-578 (2000)	
	C43	Kankia et al. "Folding of the Thrombin Aptamer into a G-Quadruplex with Sr ²⁺ : Stability, Heat, and Hydration" <i>J. Am. Chem. Soc.</i> 123:10799-10804 (2001)	
	C44	Lee et al. "A Fiber-Optic Microarray Biosensor Using Aptamers as Receptors" <i>Anal. Biochem.</i> 282:142-146 (2000)	
	C45	Leopold et al. "Influence of Gold Topography on Carboxylic Acid Terminated Self-Assembled Monolayers" <i>Langmuir</i> 18:978-980 (2002)	
	C46	Li et al. "Molecular Adtamer Beacons for Real-Time Protein Recognition" <i>Biochem. & Biophys. Res. Commun.</i> 292:31-40 (2002)	
	C47	Li et al. "Real-time Protein Monitoring Based on Molecular Beacons" <i>Curr. Proteomics</i> 1:315-324 (2004)	
	C48	Liss et al. "An Aptamer-Based Quartz Crystal Protein Biosensor" <i>Anal. Chem.</i> 74(17):4488-4495 (2002)	
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/RTC/	C50	Minunni et al. "Development of biosensors with aptamers as bio-recognition element: the case of HIV-1 Tat protein" <i>Biosens. & Bioelectron.</i> 20:1149-1156 (2004)	
	C51	O'Connor et al. "A Nemstian electron source model for the ac voltammetric response of a reversible surface redox reaction using large-amplitude ac voltages" <i>J. Electroanal. Chem.</i> 466:197-202 (1999)	
	C52	Padmanabhan et al. "The Structure of α -Thrombin Inhibited by a 15-Mer Single-stranded DNA Aptamer" <i>Biol. Chem.</i> 268(24):17651-17654 (1993)	
	C53	Pavlov et al. "Aptamer-Functionalized Au Nanoparticles for the Amplified Optical Detection of Thrombin" <i>J. Am. Chem. Soc.</i> 126:11768-11769 (2004)	
	C54	Rajendran et al. "In vitro selection of molecular beacons" <i>Nucleic Acids. Res.</i> 31(19):5700-5713 (2003)	
	C55	Robertson et al. "Selection in vitro of an RNA enzyme that specifically cleaves single-stranded DNA" <i>Nature</i> 344:467-469 (1990)	
	C56	Savran et al. "Micromechanical Detection of Proteins Using Aptamer-Based Receptor Molecules" <i>Anal. Chem.</i> 76:3194-3198 (2004)	
	C57	Smirnov et al. "Effect of Loop Sequence and Size on DNA Aptamer Stability" <i>Biochemistry</i> 39:1462-1468 (2000)	
	C58	Stojanovic et al. "Aptamer-Based Folding Fluorescent Sensor for Cocaine" <i>J. Am. Chem. Soc.</i> 123:4928-4931 (2001)	
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	C60	Tombelli et al. "New Trends in Nucleic Acids Based Biosensors" <i>Anal. Lett.</i> 37(6):1037-1052 (2004)	
	C61	Wang et al. "A DNA Aptamer Which Binds to and Inhibits Thrombin Exhibits a New Structural Motif for DNA" <i>Biochemistry</i> 32:1899-1904 (1993)	
	C62	Willner, Itamar "Biomaterials for Sensors, Fuel Cells, and Circuitry" <i>Science</i> 298:2407-2408 (2002)	
▼	C63	Winzeler et al. "Fluorescence-Based Expression Monitoring Using Microarrays" <i>Methods. Enzymol.</i> 306:3-18 (1999)	
/RTC/	C64	Yamamoto et al. "Molecular beacon aptamer fluoresces in the presence of Tat protein of HIV-1" <i>Genes Cells</i> 5:389-396 (2000)	

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